



EUROBODALLA NATURAL HISTORY SOCIETY

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SUMMER 2018

The (Australian) Masked Owl (*Tyto novaehollandiae*) – Stephens 1826

Taxonomy and distribution

The genus *Tyto* currently includes 17 species of mostly pale owls. Of these, the Australian Masked Owl is the largest and contains seven subspecies/races (some of which may be full species in their own right), four of which occur in Australia. Race *castanops* of Tasmania is the largest, but *novaehollandiae* is the most widespread occurring mainly in coastal southern Western Australia, Victoria, NSW (including the Eurobodalla) and Queensland. Race *kimberli* has a patchy distribution across the tropics and *melvillensis* is restricted to the Tiwi islands.

Description and behaviour

Weighing up to 835 grams and with a wingspan in excess of one metre, Masked Owls are the second largest species of owl in the Eurobodalla. Plumage is highly variable though females in our area are typically characterised by a pale orange wash across the whole plumage, while males are paler. The upperparts of both sexes are beautifully patterned with browns, whites, greys and yellows with underparts bearing strong blotching. Both sexes sport a strongly marked facial disk and strong powerful legs. Juveniles are similar to adults once they've lost their down.

Most of the above characteristics are shared with the Eastern Barn Owl (*Tyto delicatula*), a much more common species. Distinguishing characters of the Eastern Barn Owl include a thinner facial disk with smaller eyes and paler overall plumage, the upperparts often sporting a lot more yellow than the Masked Owl. Masked Owls also sport a more strongly patterned underwing than Eastern Barn Owls.



Demetrios Bertzeletos

Masked Owl

Photo: D. Bertzeletos

The calls of both species are similar but those of Masked Owls are louder, deeper and harsher and include a variety of hisses, cackling and screeches.

Diet and breeding

Masked Owls feed on a variety of small to medium size vertebrates such as possums and rabbits. They will also take birds, reptiles and large insects and as such are not specialists when it comes to feeding. The species occurs mainly in open eucalypt forest, though it avoids the rainforests which are typically occupied by Sooty Owls (*Tyto tenebricosa*). They can often be found in open habitats adjacent to these as well.



Masked Owl

Photo: Charles Dove

The species is monogamous and pairs occupy large home territories of between 500 to 1000 hectares. Breeding can occur at any time of the year so long as there is abundant prey. However, it does require a large cavity, be it in a tree, a cave or a cliff side. There the female will lay and incubate up to three eggs, while the male is responsible for bringing food and guarding the nest. Incubation lasts for about a month, while the chicks take up to three months to fledge and are looked after by the parents for another month after they leave the nest.

Conservation and status in the Eurobodalla

Masked Owls are naturally rare. Their large home ranges and reliance on large tree cavities means the species has declined markedly in heavily populated areas and it is listed as globally vulnerable with many subspecies being listed as endangered. In the Eurobodalla the species is rare, but perhaps stable with known territories staying occupied for many years. Dimitris Bertzeletos

What's coming up.....

Saturday April 14, 2pm: Ringlands Rainforest. Meet at the end of Flying Fox Road, Narooma. The rainforest is home to Topknot Pigeon, Brown Gerygone, Superb Lyrebird, Large-billed Scrubwren, Wonga Pigeon, Brown Cuckoo-Dove.

Sunday April 29, 9am: Bumbo Road Track. Meet at the corner of Bumbo Road and the Princes Highway, Trunketabella, north of Bodalla. We plan to walk from Bumbo Road to Western Boundary Road along a forest track. White-eared Honeyeater, Crescent Honeyeater, Superb Lyrebird, Pilotbird, Musk and Little Lorikeet and perhaps Swift Parrot.

Saturday May 12, 2pm: Runnyford Road, Runnyford. Meet at the corner of the Princes Highway and Runnyford Road, north of Mogo. We will drive along Runnyford Road to the bridge that crosses the Clyde River. Scarlet Robin, Little Eagle, Brown Goshawk, Striated Heron, Southern Emu-wren, Black-fronted Dotterel, Great Cormorant.

Sunday May 27, 11am: Annual General Meeting. Venue: Eurobodalla Botanic Gardens, Princes Highway Batemans Bay, in the Seedbank. Please ask at reception for directions. Meeting at 11am, followed by lunch (there are BBQ facilities) and then a walk through the gardens. Brown Cuckoo-Dove, Australasian Grebe, Rose Robin, Crested Shrike-tit, Bassian Thrush, Eastern Yellow Robin, Eastern Whipbird. A nomination form is included with this newsletter.

Saturday June 9, 2pm: Bingie Dreaming Track. Meet at the northern point of the track, in the car park just off Congo Road, at the southern end of Congo village. A walk through Bangalay forest to the coast with views of the ocean and Meringo Lagoon. Red and Little Wattlebird, New Holland Honeyeater, Golden Whistler, White-bellied Sea-Eagle and seabirds.

Sunday June 24, 9am: Wasp Head. Meet at the entrance to Murramarang Resort, Banyandah Street, South Durras. Wasp Head provides a great vantage point for a number of sea birds including Australian Gannet, White-fronted Tern and Albatross.

A reminder that 2018 memberships are now due

If your membership hasn't been renewed, a reminder has been included with this newsletter. Single membership \$20, family \$30 and for under 18s \$5. There are a few copies of the 31st edition of *Nature in Eurobodalla* still available for purchase and it is priced at \$13 if picked up at a field meeting or \$15.50 if posted.

A warm welcome to new members....

Suzi Bond, Hackett.
Harvey Perkins, Kambah.

A Summer of Cicadas

There are many sounds that herald the arrival of summer but none say "summer is here" like the calls of cicadas. Summer 2017/18 was a big season for cicadas and certain areas were dominated by their calls. I found myself wanting to know more about their behaviour, and because they were so prevalent, was also asked a number of questions, so embarked on a bit of cicada research.

What are cicadas?

A bug! Cicadas are part of the insect order *Hemiptera*, which are insects with piercing and sucking mouth parts. The order also includes bugs and aphids. Cicadas are classified into their own super-family, *Cicadoidea*. <https://australianmuseum.net.au/cicadas-superfamily-cicadoidea>

How many species are there?

We are all familiar with the common names of cicadas: Greengrocer, Yellow Monday (which are actually just a different colour form of Greengrocer), Floury Baker, Redeye, Razor Grinder, Cherrynose and Black Prince. In 1990, there were thought to be 240 species in Australia, but now it's believed that there could be up to 1000 species. However, fewer than 400 have been described, and like many insect groups in Australia, there is still much to learn.

How long do they live?

Cicada adults have a relatively short life, from a few days to 6 weeks, but their nymphs can live underground for up to 10 years. One of the most recognisable Australian species, the Greengrocer, has a life cycle that lasts up to 7 years.



Razor Grinder

Photo: R. Soroka

Where do they lay their eggs... in trees or on grass?

Both! The cicada life cycle has three distinct life stages: egg, nymph and adult. Eggs are laid in the slits of eucalypt branches or the stems of grasses, which are often the food plant of the next stage, the nymph. Eggs hatch, often after rain, 2 to 4 months later, although may overwinter in colder climates. When the eggs hatch, the nymphs wriggle to an opening in the slit, shed their skin and drop to the ground. They search for a crack in the surface and move underground where they construct an air cell around a suitable root, which they feed on by sucking the sap. Nymphs can remain here for 9 months to several years depending on the species. They emerge when conditions are suitable, often on a warm evening after rain. They climb up and attach themselves to a tree, reed or nearby plant (also man-made objects like BBQs!) and then the adult pushes its way out via a split in the back of the nymph shell. The life cycle is well documented with photos on the Brisbane Insects website: http://www.brisbaneinsects.com/brisbane_cicadas/Cicadas.htm

Do adults feed?

Yes they do! They feed by sucking the sap of the plant/tree they are in. This produces “cicada rain” which people assume results from cicadas urinating. Technically, it is the excess sap of the tree they are feeding on, which passes through the cicada and results in droplets that feel like rain.

Why do they call?

Only male cicadas call and they do so in order to find a mate. Cicadas are the loudest insects in the world with some species reaching 120 decibels, which is equivalent to the sound produced by a chainsaw. Each species has its own distinctive call so that they attract the right female. So, like birds, it is possible to identify a cicada by its call. The sound is produced by tymbals which are organs that sit on each side of the abdomen. Each tymbal has a ribbed membrane which is attached to a muscle and when it is contracted and relaxed, the sound is produced, very much like a plastic bottle when squashed. For more on why they call and the calling mechanism, Queensland Museum has published a great fact sheet...to access just google Queensland Museum Cicadas – our Summer Singers.

Different species call at different times of the season. The Greengrocer was one of the first species to start calling on the south coast this season. Black Prince, Silver Princess, Double-spotted Cicada and Razor Grinders were also calling in December. Later in the season, the White and Double Drummer began to call. The loudest individuals are Greengrocer and Double Drummer, but the areas of bush which were quite unpleasant to be in were those dominated by the Razor Grinder. This species gathers in large groups resulting in a deafening chorus. The call comes and goes in waves and seemingly reaches a crescendo before fading away. Lindsay Popple has developed a great website which features the calls of many species: <http://dr-pop.net/cicada.htm>



Dollarbird with a cicada Photo: R. Soroka

Why do they aggregate in certain areas?

To annoy predators. It is thought that another function of cicada calls is to repel birds, the major predator of cicadas. Cicadas aggregate in an area of the bush and their collective calls are so loud that birds cannot communicate with each other and so stay out of that area, thereby reducing the chance of predation.

I also wondered why they chose one particular patch of bush rather than another. At Pedro Swamp, Razor Grinders seemed to be aggregated in certain areas which seemed identical to the neighbouring bush in terms of eucalypt species, understorey, density etc. I couldn't find an answer so wrote to Lindsay Popple who kindly responded: "...the greatest influence seems to be the location where the first male cicada starts calling. Large, conspicuous cicadas like Razor Grinders aggregate readily and they do this using a behaviour called phonotaxis (i.e. whenever they take flight they tend to orientate themselves towards the sound of a calling male of the same species and land somewhere in the vicinity of that sound source). The clusters can move around a bit, but they tend not to, because there is usually at least one male calling that the others can orientate to. Even when they all stop calling, there is usually enough males

left in the cluster to reinforce the aggregation again when singing recommences. Hopefully that makes sense and goes some way towards answering your question.”

How many species occur in the Eurobodalla?

Potentially up to 20 species. In the summer of 2017/18, the following species were recorded: Black Prince, Silver Princess, Double-spotted Cicada, Razor Grinder, Greengrocer, Double and White Drummer, Redeye and Black Squeaker. Julie Morgan

Sources: Max Moulds, 1990, 'Cicadas of Australia', New South Wales University Press; and the websites already mentioned in the article.

Territory Sizes: What do you think?

We started colour-banding the birds on our site here at Ballara, in 2007. Between then and the 2014 breeding season, the position of every banded bird sighted was recorded as a grid reference on our 10 ha site. We banded 18 species, but only accumulated sufficient amounts of long-term data for 11 of these. There were three separate problems with the other seven species – Eastern Whipbird, Grey Fantail, Grey Shrike-thrush, New Holland Honeyeater, Satin Bowerbird, Striated Thornbill, and Wonga Pigeon. There were not enough individuals to either band or get repeated sightings, or the birds would be banded and would never be seen again, or the birds spent so much time high in the trees that the bands were difficult to read.

But, for 11 species, males and females combined, we accumulated about 3000 sightings over the eight seasons. We are now analysing these data (which include the grid references of all the nests of all the individuals of these 11 species) and they are proving to be, literally, the gift that keeps on giving. We are now in a position to ask, for example, the following questions:

- How does territory size relate to species and sex?
- Does a resident male keep the same territory for repeated seasons?
- What about a migrant species like the Rufous Whistler; does he come back to the ‘same’ territory?
- What if a male gets a new mate, does he maintain the ‘same’ territory?
- What about when a female changes mates when her mate dies; does she adopt the territory of the new male? In established pairs, are the territories the same in both position and extent?
- What about nests? Are they laid all over the territory, in the middle, around the outside, and are there any differences in these patterns between species?

It’s a good thing we stopped collecting data in 2014, it looks like we will now need another 10 years to analyse it!

We have got as far as working out the territory sizes for the males and females of each species. It is surprising that there are very few reliable estimates of territory size for Australian birds, or for birds of other countries for that matter. And there are certainly no estimates for multiple species of a community, from data collected over 8 years.

Julie, Sarah and I thought it would be a bit of constructive fun, to run a competition to see if members could rank the 11 species in terms of the males’ territory size, and to guess, for each species, whether the sizes of the territories differ (larger or smaller) for the females. Your rankings can comprise different species that have the same territory size.

Below is the list of species, with a column for ranking the size of the male territory and another column for the relative size of the female territory. Email your completed list to us at guppymands@bigpond.com We look forward to hearing from you. Michael and Sarah Guppy

Species	Ranking	Relative size of female’s territory (Bigger, smaller or same)
White-throated Treecreeper		
Superb Fairy-wren		
Variegated Fairy-wren		
White-browed Scrubwren		
Brown Thornbill		
Eastern Spinebill		
Lewin’s Honeyeater		
Yellow-faced Honeyeater		
Eastern Yellow Robin		
Golden Whistler		
Rufous Whistler		

Eucalyptus botryoides and Endangered Ecological Communities

An ecological community is a naturally occurring group of plants, animals and other organisms living in a unique habitat. A community may be listed as endangered because of a significant reduction in its distribution, changes in structure or composition, invasion by exotic species or habitat degradation and/or fragmentation. It is then referred to as an Endangered Ecological Community or an EEC. There have been 12 EECs declared in the Eurobodalla, and the Bangalay Sand Forest is one of them. The abundance and distribution of this EEC has declined significantly due mostly to land clearing for human habitation and other uses.

The most extensive remaining area on the NSW South Coast occurs on a large sand sheet between the Moruya and Tomaga River mouths. *Eucalyptus botryoides* is the dominant tree in the Bangalay Sand Forest EEC. Bangalay (according to PlantNet traditionally pronounced 'Bang-ally') is the common name for this species. It is also known as Southern Mahogany. The species name *botryoides* is from the Greek '*botrys*' meaning a cluster or bunch of grapes and '*oides*' meaning like, referring to the way the buds and fruit are arranged in clusters on the stem.

Eucalyptus botryoides is a coastal or near coastal species which grows naturally from near Newcastle, NSW to near Metung, Victoria. It is only found from sea level to 300m and areas of rainfall from 700mm to 1300mm. It is found on sands and loams in the shelter of coastal dunes or river valleys. In the 1960s and 1970s it was widely planted in Sydney and surrounds, especially in parklands as a shade tree. According to its location, it varies from a medium to tall tree: 10-40m in height; smaller and spreading in coastal dunes; taller and more upright inland. Bark is red-brown on the coast and dark grey inland. It is thick and furrowed and persistent on the trunk and lower branches and can be easily removed in thick strips. On the upper branches it is smooth and white, cream or pale brown.



Bangalay

Photo: F. Anderson



Bangalay buds

Photo: F. Anderson

Leaves usually form a dense canopy. They are dark shiny green above and pale green beneath, often brown blotched as a result of damage by brown lace lerp. Veins are prominent at an angle to the midrib; the apex is pointed. Mature leaves are 10-16cm long, 4cm wide and lance shaped. Juvenile leaves are thinner and have a wavy edge. The inflorescence has 7-11 flowers on long (up to 1.5cm) flattened peduncles (stalks) in the leaf axils. The individual flowers are usually sessile (no stalks). Buds are 7-11mm long and 4-6mm in diameter and green to yellow. Fruit is cylindrical and cup shaped, 7-12mm long, 5-9mm in diameter, with 4 valves below rim level. Flowers are 2cm across, white to cream and appear between January and March. It can survive fire as it has a lignotuber and epicormic buds.

This species is widely planted because it is quick growing and known to be a good shade tree. However, it is not suited to small areas because of its size and the likelihood of damage to pipes and building foundations. It should only be planted in large areas such as parks, public gardens and sand dunes. It has been cultivated beyond its native range in Australia, particularly in coastal regions. It has escaped cultivation and is now regarded as an environmental weed in Western Australia and parts of Victoria.

Eucalyptus saligna, Sydney blue gum, has similar buds and foliage but differs in having a smoothed barked trunk and smaller, stalked buds and fruit. In nature, it may intergrade with *E. botryoides* where their

distribution overlaps. This occurs primarily between Sydney and Wollongong and the resulting hybrid tree is called Illawarra Blue Gum or Southern Blue Gum. Variations that may occur include: length of bark stocking; position of valves on the fruit and length of fruit stalk. Depending on the habitat, sometimes they are more like *E. saligna*, while at other times more like *E. botryoides*. Most cannot be ascribed to either species. These hybrids also occur in the Mogo State Forest along Dunns Creek, and could be the most southerly occurring examples.

Aboriginal people removed the thick bark to make canoe hulls and to build shelters. The outer bark could be peeled off to start fires and the hard wood used as a fuel. The sap was dissolved in water and used as a medicinal body wash. The red-brown wood is strong and durable. In the past, it was used for wheel construction, boat-building, roof shingles and railway sleepers. It is still used for fence posts, furniture and fuel. The flowers attract native bees, and hollows in mature trees provide shelter for their hives. Trees are also valued by apiarists for their nectar and pollen production. Yellow-bellied Gliders also shelter in hollows of large old trees and use these trees as a food source. They extract sap by biting into the trunk and branches often leaving a distinctive V shaped scar. They also eat pollen when available and insects which shelter under the bark. Many birds and other animals rely on these forests for food and shelter and although they have been classified as an EEC, are still being destroyed for human convenience. Fran Anderson

Field meeting at the Batemans Bay Water Gardens, February 2018

The first field meeting of the year was held at the Batemans Bay Water Gardens and was attended by 21 members and friends. Our newest member and butterfly expert, Suzi Bond, attended the meeting so the focus was on butterflies as well as birds.

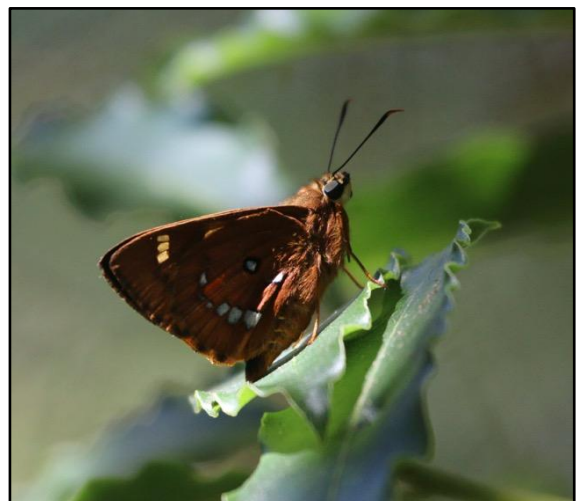
The venue was chosen because there had been some very interesting sightings in the last few months of 2017: Baillon's Crake, Spotless Crake, Latham's Snipe, Tawny and Little Grassbird and a female Red-capped Robin. Unfortunately, these particular species didn't make an appearance on the day.

Nicola Clark led the walk and started by giving us an overview of what to expect in different parts of the gardens. We began by having a look in the water around the back of the museum, where we had excellent views of a Royal Spoonbill and an Eastern Great Egret.

We then assembled at the start of the boardwalk where Nicola played the call of the Little Grassbird, an elusive species whose presence is best confirmed by the call rather than actually seeing the bird. We set off and tried to count the Pacific Black Duck as we went; 100 seemed to be the consensus at the end of the walk. We searched through the reeds and saw many Purple Swamphen and Eurasian Coot but there were no crakes or rails. An Australian Reed Warbler attracted our attention. This is another species that is heard more than seen but we had excellent views of two adults feeding a young bird. A number of dragonflies and damselflies flitted across the surface of the water and landed briefly, which allowed us to identify the following species: Blue Skimmer, Black-faced and Wandering Percher, Common Bluetail and Red and Blue Damsel.

As we reached the end of the boardwalk, a strange object had us all wondering. It looked like a dead bird that had fallen into a tree guard. We walked around trying to get some perspective and it was then suggested it was a fungus. As we examined it more closely, we agreed that it was indeed a fungus, the most extraordinary one we had seen. A search of the surrounding area revealed another specimen. As none of us had ever seen this type before, we guessed it might have been brought in with the plants or the mulch.

We continued the walk and came into the area of the gardens which was occupied by around 200 Grey-headed Flying Fox. Nicola pointed out a magnificent Satin Bowerbird bower with the most eclectic collection of blue items. There were also a number of butterflies in this area - Meadow Argus, Orchard Swallowtail and a Splendid



Splendid Ochre

Photo: S. Bond

Ochre, which sat sunning itself long enough for Suzi to point it out to us. Later we also had views of an Australian Painted Lady, Cabbage White and Common Grass Blue butterflies.

The last section of the walk featured a large grassy shady area and members took advantage of the cooler conditions to sit and chat as it had been a while since we'd seen one another. A White-headed Pigeon sat and posed for us all, birdwatchers and photographers. At the bird call we had 33 bird species which didn't include the Muscovy Duck that was standing right next to us as if waiting to be counted.

A great first outing of the year and our thanks go to Nicola for leading the walk. Julie Morgan

P.S. A week later, Nicola visited the BBWG and saw 2 Latham's Snipe and 3 Nankeen Night Herons!

Wallaby Days, Part One

We live on 20 hectares of bush and, as would be familiar to those members who live in the bush, we are regularly visited by Eastern Grey Kangaroos and Swamp Wallabies. Red-necked Wallabies are also on our property, but we don't see them as often as the other two.

For at least three years now, we have been visited daily by a growing group of Swamp Wallabies, all individually recognisable by their ears, face or eye shape, or fur colour. They come because they like the bird seed that we put out each day. We have come to know each individual very well, and they have become very tame. There is very little in the literature about the behaviour of these animals, probably because it would be difficult to study them, especially their interactions as, apart from the females and their young, they appear to be solitary. Our situation is an artificial one, as it brings individuals (up to five at a time) into close contact. Nevertheless, over the years we have learned much about the 'pseudo-natural' history of these animals that we thought would be of interest to ENHS members.

The article is quite long, so it will be published in about four sections.

The Cast

Fats: The main male

Mrs: The main female

Albertine: Mrs's first joey

Junior: Mrs's third joey

Tuppence: Mrs's fourth joey

Threepence: Mrs's fifth joey

Big Al: A recently arrived male

Timeline for the group

May 2015: It all started, when Fats was recognized as an individual, and as a regular visitor.

July 2015: Mrs seen with Albertine in and out of the pouch.

October 2015: Mrs seen with Albertine as an independent joey.

We have always assumed that Fats is the father of all Mrs's joeys. We have seen him behind Mrs with an erect penis, but have never seen them mating. Albertine was not named at this time and disappeared until sometime in 2016, when a new but quite tame adult wallaby appeared. We assumed this was the October 2015 joey. The naming of Albertine has a bit of a story behind it. We called this new wallaby 'the stranger', because at that time the only regular visitors were Fats and Mrs. Stranger turned into l'étranger (because of the book by Albert Camus) and so l'étranger became Albert. We later noticed that Albert had a joey, so she became Albertine.



Fats, the Swamp Wallaby

Photo: S&M Guppy

February 2016: Mrs seen with a new joey sticking its head out of the pouch. This joey disappeared and was not seen again.

September 2016: Junior's head sticking out of the pouch.

November 2016: Junior out of the pouch.

January 2017: Junior still suckling from Mrs, but Mrs has Tuppence as a slight bulge in the pouch. We decide Junior is a female due to the shape of the head, and the absence of obvious testicles.



Junior and Mrs

Photo: S&M Guppy

May 2017: Tuppence doing a lot of moving in the pouch. By this stage Mrs does not tolerate Junior coming near her.

August 2017: Tuppence's nose is seen poking out the pouch.

October 2017: Tuppence out of the pouch; Fats getting interested in Mrs again.

December 2017: Mrs has Threepence as a bulge in the pouch.

January 2018: Big Al appears on the scene and appears to be displacing Fats. He is following Junior around with an erect penis; this confirms that Junior is a female. Big Al is surprisingly tame for a new arrival, which is puzzling.

February/March 2018: As we write, the usual state of affairs is the presence of Fats, Mrs (with Threepence in the pouch), Tuppence and Junior, but Mrs is now becoming intolerant of Tuppence. Big Al comes and goes. He is very tame and is obviously dominant over Fats. Albertine has a joey in the pouch and appears irregularly.

Over these three years, we have observed the wallabies for many hours, and have seen behaviours and scenarios that may not have been recorded before. These will be detailed over the next few issues, and will cover various aspects of the behaviour of these animals, including food, senses, interaction, parasites and care of the joeys. Michael and Sarah Guppy



ENHS members have many stories to tell about their observations of nature. 'My Patch' is a forum where these stories can be shared with others and will be published both in the newsletter and on the website. Photos are welcome. Please send your contributions to mypatch@enhs.org.au

Logo design by Trevor King

Wasps and Bees

Picked up a wasp dead on the roadway here in Broulee (24/1/2018), probably hit by a car. The build and colouration led me to first think this was a Potter Wasp (*Eumeninae*). Body length 24mm, markings black and yellow, however, an exhaustive search failed to locate a picture of a specimen with the same or even similar colour pattern on the thorax and abdomen.

Reference to 'The Insects of Australia: A textbook for Students and Research Workers'; Melbourne University Press 1970, colour plate 5, figure Q, provided an exact likeness to my wasp. I am therefore putting my money on *Exeirus lateritius*, commonly known as the Australian Cicada Killer.

Wiki tells us that the cicada killer is the sole member of the genus *Exeirus*. It is a large, solitary, ground-dwelling, predatory wasp which hunts numerous species of cicada. *E. lateritius* stings and paralyzes cicadas high in the trees; they drop to the ground, and the wasp then moves them to its burrow, pushing with its hind legs, sometimes over a distance of a hundred metres. The paralysed cicada is placed in one of several chambers in the wasp's burrow. An egg is then laid on it and the grub which hatches feeds on the dead cicada. A photo of the wasp taken by Michael Rooke is posted on the following website: <http://www.bowerbird.org.au/observations/103200>.

In our rosemary bush this morning a bee of the genus *Amegilla*. First thought was for the Blue-banded Bee, but the bands were more a coffee brown, not blue. However, a further search suggests that the bands on the abdomen of *A. cingulata* are not necessarily blue, despite the common name. Malcolm Fyfe

Neon Cuckoo Bee

Blue-banded Bees arrive back on our farm each Spring and return to the same nesting burrows in the hardened dirt at the base of a fallen tree. They lay their eggs and store pollen for the larvae to feed on when they hatch out. One day as I watched the bees quickly enter the holes, I noticed another similarly coloured insect hovering around. It was slower to enter the burrows and was being nudged and disturbed by the bees. This turned out to be a Neon Cuckoo Bee (*Thyreus nitidulus*). As the name suggests, they lay their eggs in the nests of other bees, such as the Blue-banded, and their newly hatched larvae eat the stored pollen so the Blue-banded Bee larvae starve when they hatch. Julie Collett



Neon Cuckoo Bee



Blue-banded Bee

Photos: J. Collett

The Secret of Shark Bay

Christmas morning did not look promising as we headed to the beach to snorkel. It was overcast, cool and breezy outside and once in the water, visibility was poor after recent rain. However, the reward for our efforts was this little seahorse, the first we have ever seen. I think it is a Bigbelly seahorse (*Hippocampus abdominalis*), which is found in NSW, but it could be a Potbelly seahorse (*Hippocampus bleekeri*) just out of its usual range (Victoria – South Australia and Tasmania). Apparently, seahorses are not rare, but they conceal themselves well.

But wait, there's more! Two weeks later I spotted another one near Mossy Point wharf during a morning walk. Helen Ransom

References: Australian Museum website; Edgar G. J. 'Australian Marine Life: The Plants and Animals of Temperate Waters.' Second edition. 2008



Seahorse Photo: H. Ransom

Highlights from ENHS records - Summer 2018

Avian species	Number	Place	Observer	Comments
Stubble Quail	Up to 20	Com	JC	5 dependent young and 2 immatures in Dec.
Black Swan	400	WL	MA	In Jan.
Australian Shelduck	1	T'bella/Com	DB/JC	
Brown Cuckoo-Dove	4	Lilli Pilli/MKS	IAG/SMG	
Peaceful Dove	2	Com	JC	
Topknot Pigeon	7, 17	PS/MO	JM/NM	Dec/Jan
Tawny Frogmouth	3, 1	PS/Pedro/ Deua R	JS/RS/AR	
White-throated Nightjar	Up to 20	PS	JM	Greatest numbers in early Jan.
Aust Owllet-Nightjar	1	PS/Com	JM/JC	
White-throated Needletail	100s	SB	NC	
Shearwater sp.	<100	Off Corunna L	FM	
Short-tailed Shearwater	Hundreds	Off MO	NM	
Fluttering Shearwater	2	Off MO	NM	
Australasian Gannet	5	MO/Corunna L	NM/FM	
Pied Cormorant	12	Broulee	GLM	Flying west.
White-necked Heron	4	MYA/T'bella	JM/MA	
Great Egret	16	T'bella	DB	In Dec.
Intermediate Egret	1	Com	JC	Feb.
Striated Heron	2, 1	NA/Broulee	MA/GLM	
Little Egret	Up to 12	MB	MA	
Eastern Reef Egret	2, 1	MO/Bingie Pt/ Corunna L/MB	NM/DHK/ FM/MA	
Nankeen Night-Heron	3, 2	BBWG/Com	NC/JC	
Yellow-billed Spoonbill	1	Com	JC	Feb.
Eastern Osprey	2	BB	NC	Near nest on Budd Is.
Square-tailed Kite	2, 1	PS/SB/Broulee/ MHS/MO/MB	JM/NC/NM/ GLM/MA	
White-bellied Sea-Eagle	4	Corunna L	FM	2 juveniles, one carrying prey.
Collared Sparrowhawk	1	PS	JM	
Swamp Harrier	3	PS	JM	1 juvenile in Jan.
Wedge-tailed Eagle	Up to 3	PS	JM	Including a juvenile.
Australian Hobby	1	Surfside/Malua Bay/MO	R Soroka/ MW/NM	
Peregrine Falcon	2, 1	MB/Malua Bay	MA/MW	Two harassing 3 Australian Ravens at MB.
Buff-banded Rail	3	Mogo	MF	With one dependent young.
Aust Pied Oystercatcher	8	BI	MA	Juvenile at Cullendulla.
Sooty Oystercatcher	9, 8	CO/MO	JM/DHK	
Pacific Golden Plover	4	CO	JM	
Red-capped Plover	30	Brou L	DB	
Double-banded Plover	1	Brou L	NC	First of season Feb 27.
Black-fronted Dotterel	5, 4, 3	Com/MO/Bingie	JC/NM/DHK	Dependant young at Com.
Hooded Plover	2	MB	MA	Nesting on 1080 Beach in Dec. Eggs lost in Jan.
Latham's Snipe	2, 2, 1	BBWG/Com/PS	NC/JC/JM	
Bar-tailed Godwit	More than 80	NA	MA	
Whimbrel	1	NA	NC	
Eastern Curlew	4, 2	Brou L/NA	NC/MA	
Ruddy Turnstone	2	CO	JM	
Red Knot	2, 1	CO/Brou L	JM/DB/MA	
Sanderling	4	Brou L	MA	
Red-necked Stint	8	Brou L	DB	Low numbers this season.

Painted Button-quail	1	Surfside	R Soroka	Captured on a camera trap.
Pomarine Jaeger	1	Mullimburra Pt	NM	Adult, light morph, Jan 13
Little Tern	60, 1	Brou L/Grey Rocks	MA/DB/ DHK	Nesting at Brou L.
Fairy Tern	2	Brou L	NC/DB	With young in Dec.
Caspian Tern	10	Sth DS	J Coffey	
Common Tern	1	BI	MA	Jan.
Glossy Black Cockatoo	5	PS	JM	With dependent young.
Gang-Gang Cockatoo	19, 5, 4	Cool/Lilli Pilli/ Broulee/ Deua R	DO/IAG/ GLM/RS/AR	
Little Lorikeet	10, 6	MB/PS	MA/JM	
Eastern Koel	young	Broulee	GLM	Being fed by a wattlebird.
Channel-billed Cuckoo	4	Surfside/ Com	R Soroka/ JC	Pair engaged in gift exchange. Young fed by Aust Raven.
Pallid Cuckoo	2 or calls	Com/Malua Bay /Cool	JC/MW/DO	Back at Com after a few years absence.
Brush Cuckoo	1 to 3 or calls	Malua Bay/ MKS/PS/Deua R/Com	MW/SMG/ JM/RS/AR/ JC	Juvenile at Broulee in Jan. (GLM)
Powerful Owl	Call	MKS	SMG	
Barking Owl	1	Polwombra	J Wiles	In Feb.
Sooty Owl	2, 1	NA/PS/Pedro	JMG/JM/JS	In Feb.
Masked Owl	1	PS/Pedro	JM/JS	Young trilling at Pedro.
Azure Kingfisher	2, 1	Com/Deua R/ MO	JC/RS/AR/ NM	
Sacred Kingfisher	Up to 6	PS/Com	JM/JC	Nesting at PS with adults feeding a juvenile in Feb.
Dollarbird	6	PS/Com	JM/JC	2 young at Com in Jan.
Superb Lyrebird	1 or calls	Malua Bay/NA/ MKS/Cool	MW/JMG/ SMG/DO	
Southern Emu-wren	Up to 6	Candlagan Ck	GLM	
White-throated Gerygone	2 to 4	Com	JC	Through summer.
Striated Pardalote	2 or calls	Com/MB	JC/MA	Dec.
Scarlet Honeyeater	1 or calls	Malua Bay/ MKS/PS/Com	MW/SMG/ JM/JC	
White-cheeked Honeyeater	4, 4, 3	Kianga/Com/ Broulee	BS/JC/MF	On flowering box trees at Com.
Little Friarbird	1	PS	JM	First for many years.
Varied Sittella	6, 4	ERBG/PS/MO/ Com	JM/NM/JC	Dependent young at PS in Feb.
White-bellied Cuckoo- shrike	1 or 2	Sth DS/PS/Com	J Coffey/ JM/JC	
Cicadabird	Up to 10	PS	JM	2 young in Feb.
Crested Shrike-tit	1	Com	JC	Feb.
Australasian Figbird	10, 1	MYA/MHS	JM	Juveniles in MYA in Dec.
White-breasted Woodswallow	Up to 12	MHN/PS	NC/JM	At least 3 young.
Dusky Woodswallow	3	Sth DS/Cool	J Coffey/DO	With 2 dependent young at DS
Rufous Fantail	1 or 2	Sth DS/PS/Deua R/Bergalia/NA/ MB	J Coffey/MA JM/RS/AR/ DHK/JMG/	
Leaden Flycatcher	4, 2	PS/MO	JM/NM	Carrying food at MO in Feb.
Satin Flycatcher	1	ERBG	DB	Male, with a male Leaden.
Black-faced Monarch	3, 2	Sth DS/MB	J Coffey/ MA	
White-winged Chough	Up to 22	PS	JM	With young
Rose Robin	1, call	NA/Com	JMG/JC	
Golden-headed	Up to 20	Com	JC	With young in Jan.

Cisticola				
Aust Reed Warbler	6, 4, 3, 2	PS/Com/BBWG /MO	JM/JC/FM/ NM	Two adults feeding young at BBWG.
Little Grassbird	2	PS/Com	JM/JC	
Brown Songlark	2	Com	JC	Early Dec.
Mistletoebird	5, 2, 1	PS/Com/ Corunna L	JM/JC/FM	
Australasian Pipit	13, 5, 1	Com/Bingie Pt/ Broulee	JC/DHK/ GLM	3 dependent young at Com in Dec.

Non-avian species	Number	Place	Observer	Comments
Common Wombat	Signs	Cool	DO	Active burrows and fresh scats.
Short-beaked Echidna	1	PS/MB	JM/MA	
Spotted-tailed Quoll	Signs	PS	JM	Fresh scats.
Greater Glider	1	Malua Bay	G Stevens	Juvenile found in backyard, taken to vet but died.
Sugar Glider	4	PS	JM	
Yellow-bellied Glider	1	Broulee	GLM	Possible call at PS.
Common Ringtail Possum	2, 1, 1	PS/Lilli Pilli /Broulee	JM/IAG/ GLM	
Common Brushtail Possum	Up to 6, 2	Com/Lilli Pilli	JC/IAG	
Eastern Grey Kangaroo	Up to 51	Cool	DO	
Grey-headed Flying Fox	200	BBWG	FM	100s at MHS in Jan (D Num)
Little Red Flying Fox	1	Com	JC	
White-striped Freetail Bat	Up to 10	PS	JM	
Snake-necked Turtle	20, 2	Com/Mossy Pt	JC/HR	
Cream-striped Shinning Skink	1	PS	JM	On upstairs verandah in Jan. Not seen for many years.
Yellow-bellied Water-skink	3	Com	JC	
Eastern Water-skink	3, 1	Lilli Pilli/Sth DS	IAG/ J Coffey	
Gippsland Water Dragon	20	Com	JC	
Jacky Lizard	4, 2	Mossy Pt/PS/ Cool	HR/JM/DO	
Lace Monitor	1 or 2	Lilli Pilli/PS/ Com/Cool	IAG/JM/JC/ DO	

From the Eurobodalla Natural History Facebook page:

On the 28th of February, Megan and Kevin Dawes posted: “We photographed this large turtle carcass on Longbeach a couple of days ago. It had significant damage on one side. I wonder how old it was.”

It was a Leatherback Turtle *Dermochelys coriacea*, an endangered species in NSW. Its distribution is known to extend to the central coast of NSW although a young one was rescued in Merimbula a few years ago. This is the first record of the species in the Eurobodalla.



Frogs JC/JM/HR/DO	Common Eastern Froglet, Brown Striped Grass Frog, Smooth & Tyler's Toadlet; tree frogs: Brown, Eastern Sedgefrog, Jervis Bay, Keferstein's, Peron's, Tyler's, Verreaux's.
Moths J Coffey/NC/JC/ MF/JM/GLM	Plume, Asian Corn Borer, Meal, Beet Webworm, Red-lined & Black Geometrid, Cream Wave, Plantain, Grey Twisted, Triangular, Neat Epidesmia, Grey-headed Anthelid, Coprosma Hawk, Banded, Spotted & Lydia Lichen, Variable Halone, Magpie, Tiger, Crimson Tiger, Heliotrope, Northern Old Lady, Whistling, Mistletoe, Black Noctuid, Native Budworm, Bogong, Brown Cutworm. Larvae: Varied Anthelid.

Butterflies MA/DB/JC/MF/ GLM/JM/DO/ PJP/JS/FM	Splendid Ochre, Narrow-brand Grass-dart, Blue Triangle, Orchard & Dainty Swallowtail, Imperial & Black Jezebel, Caper & Cabbage White, Dusky Knight, Brown Ringlet, Varied Sword-grass Brown, Marbled Xenica, Wonder, Spotted & Common Brown, Varied Eggfly, Meadow Argus, Aust Painted Lady, Yellow Admiral, Common Crow, Chequered Copper, Moonlight Jewel, Imperial Hairstreak, Common Grass Blue.
Dragon & Damselflies JC/MF/JM	Common & Aurora Bluetail, Blue Ringtail, Red and Blue Damsel, Orange Thread-tail, Gold-fronted River Damsel, Black-faced, Wandering & Scarlet Percher, Blue Skimmer, Common Glider, Tau & Australian Emerald, Graphic Flutterer.
Beetles JC/MF/JM	Net-winged, Plague Soldier, Repsimus, Christmas, White Christmas, Dung, Small Blue Leaf, Argentinian and Green Scarab, Banded Pumpkin, Metallic Green Acacia, Three-lined Potato, Honeybrown, Belid & Botany Bay Weevil; Ladybirds: Transverse, 26, 28 & Common Spotted, White collared, Striped, Fungus-eating, Mealybug.
Bugs JC/MF/JM	Water Strider, Water Boatman, Bronze Orange, Harlequin, Metallic and Brown Shield. Cicadas: Double-spotted, Black Prince, Greengrocer, Razor Grinder, Redeye, Silver Princess, Black Squeaker, White & Double Drummer.
Other insects J Coffey/JC/MF/ JM/GLM	Blue Banded and Neon Cuckoo Bee. Yellow-winged Locust. Wood Scorpion. Wasps: Common Paper, White-faced Brown Paper, Blue Flower, Australian Cicada Killer, Orange Caterpillar Parasite. Fly: Spotted March, Green Long-legged, Robber, Giant Robber.
Spiders JC/NC/KMD/MF /JM/GLM	Spiny, Two-spined, White-spotted Swift, Wheel-weaving Garden, Black House, St Andrew's Cross, Leaf-curling, Jumping, Ludicra Jumping, Little Striped Wolf, Huntsman, Net Casting, Water, Daddy Long Legs, Golden Orb.

RAINFALL (mm). December: 79 at Lilli Pilli, 118.5 at MKS, 134 at Bergalia, 149 at Com, 137.5 at MB, 112.75 at Cool. **January:** 29 at Lilli Pilli, 98 at MKS, 156 at Bergalia, 101.5 at Com, 48.5 at MB, 67 at Cool. **February:** 70 at Lilli Pilli, 162 at MKS, 153 at Bergalia, 158 at Com, 98.5 at Cool.

Contributors

MA	M Anderson, MB	IAG	I&A Grant, Lilli Pilli	JS	J Sagar, Pedro
DB	D Bertzeletos, Surfside	SMG	S&M Guppy, MKS	BS	B Scales, Kianga
AC	A Christiansen, MB	DHK	D&H Kay, Bergalia	RS/AR	R Stacey & A Rees, MYA
NC	N Clark, SB	GLM	G&L McVeigh, Broulee	MW	M Wilkinson, Malua Bay
JC	J&P Collett, Com	NM	N Montgomery, MO	FM	Field Meeting
KMD	K & M Dawes, Surfside	JM	J Morgan, PS		J Coffey, Sth DS
MF	M Fyfe, Broulee	DO	D Ondinea, Cool		D Num, MHS
JMG	J&M Gordon, NA	PJP	P Parker, TS		G Stevens, Malua Bay
		HR	H Ransom, Mossy Pt		J Wiles, Polwombra
Places					
BB	Batemans Bay	ERBG	Eurobodalla Botanic Gardens	NR	Nature Reserve
BBWG	Batemans Bay Water Gardens	MKS	Maulbrooks Rd S, MYA	PS	Pedro Swamp
BI	Bermagui	MO	Meringo	PP	Potato Point
BP	Burrewarra Point	MYA	Moruya	SB	Surf Beach
CO	Congo	MH	Moruya Heads, N&S	SF	State Forest
Com	Comerang	MB	Mystery Bay	T`bella	Trunketabella
Cool	Coolagolite	NA	Narooma	TS	Tuross
DS	Durras	NP	National Park	WL	Wallaga Lake

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